

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1-56. Canceled.

57. (Currently amended) An alkaloid ~~when isolated from the straw according to claim 52~~ an alkaloid poppy plant transformed or transfected with a polynucleotide comprising SEQ ID NO:10 or a variant or truncated fragment thereof wherein said variant or truncated fragment thereof encodes a cytochrome P-450 reductase enzyme, and wherein said plant has altered expression of the cytochrome P-450 reductase enzyme.

58. (Original) An alkaloid according to claim 57 selected from the group consisting of morphine, codeine, oripavine and thebaine.

59. (Currently amended) A method for the production of poppy plant alkaloids, comprising the steps of: [;]

a) harvesting capsules of an alkaloid poppy plant transformed or transfected with a polynucleotide comprising SEQ ID NO:10 or a variant or truncated fragment thereof wherein said variant or truncated fragment thereof encodes a cytochrome P-450 reductase enzyme according to claim 1, to produce a straw, where the poppy plant is such a plant that the straw has a higher or different alkaloid content when compared to the straw obtained from a poppy plant which has not been transformed or transfected[.]; and

b) chemically extracting the alkaloids from the straw.

60. (Currently amended) A method for the production of poppy alkaloids comprising the steps of:

a) collecting and drying the latex of the immature capsules of an alkaloid poppy plant transformed or transfected with a polynucleotide according to claim 1 comprising SEQ ID NO:10 or a variant or truncated fragment thereof wherein said variant or truncated fragment thereof encodes a cytochrome P-450 reductase enzyme, to produce

opium, where the poppy plant is such a plant that the opium has a higher or different alkaloid content when compared to the opium obtained from a poppy plant which has not been transformed or transfected[.]; and

- b) chemically extracting the alkaloids from the opium.

61. (Previously presented) A method according to claim 59, wherein the alkaloid is selected from the group consisting of morphine, codeine, oripavine and thebaine.

62. (Previously presented) A method according to claim 60, whereas the alkaloid is selected from the group consisting of morphine, codeine, oripavine, and thebaine.